

30100-110 20-10-10
20-10-10

SEP 28 1983

Minsky papers.

Do you want to say anything
about restrictions, if any, on
access?

See enclosed papers.

Thank you
Y.

Do the readers know

what R.A.C. is? I think in
this country about the 11. 11. 11
which is the date of the
centenary of R.A.C. - 1911, and for
the 11. 11. 11. 11.

Thank you for your help and advice.

correspondence (1972-74), and photocopies of Avery's scientific reports.

A new physiology laboratory for Mirsky's research was completed in 1947, and the following year he was appointed a Senior Member of The Rockefeller Institute. With his first Assistant, Hans Ris, Mirsky worked out methods for studying the chemistry of isolated chromosomes and nuclei of different cells. They were among the first to demonstrate that the quantity of DNA per cell nucleus is a species constant, irrespective of the somatic origin (e.g. liver versus blood) of the cells; sperm cells were found to have one-half the amount found in somatic cells.³ There is a letter in the collection from H.J. Muller to Mirsky, 11 August 1950, about the "grand discovery" of DNA constancy.

In the 1950s the research of the Mirsky laboratory shifted to the study of synthetic functions of the cell nucleus. The laboratory hosted many visiting investigators, and graduate students also joined the department as the Institute established itself as a graduate university in the 1950s and 1960s (the name was officially changed to "The Rockefeller University" in 1965). The correspondence from this later period is much more extensive; a comprehensive list of names is recorded in the unpublished guide to the collection. Letters relevant to the scientific work of the Mirsky laboratory include a letter from Salvador E. Luria to Mirsky, 25 March 1955, expressing "delight" at findings recently published by Mirsky's associate Vincent G. Allfrey on the role of DNA in protein synthesis. Also of note is Mirsky's correspondence with M.H.F. Wilkins, April-December 1955, on X-ray diffraction studies of chromosomal nucleoproteins. Mirsky supplied Wilkins with biological material, and several X-ray diffraction photographs sent by Wilkins are in this file. A very helpful overview of the Mirsky laboratory's contributions may be found in a biographical memoir of Mirsky by a former Ph.D. student, Bruce

*1947-1948
Rise
Mirsky
of U.S.*

Institute for Medical Research: Mirsky at the laboratories in New York City, and Anson at the Institute's Princeton branch. They were able to continue and extend the studies of protein denaturation, and between 1928 and 1935 co-authored 29 published papers. From 1935 to 1936 Mirsky was a visiting professor at the California Institute of Technology, where he worked with Linus Pauling on theory of protein structure.¹ Mirsky's early scientific work is documented primarily in laboratory notebooks and unpublished scientific reports. There are also some valuable autobiographical and historical remarks in exchanges with Alfred D. Hershey (1970), Daniel Koshland, Jr. (1971), and Jeffries Wyman (1972).

The protein denaturation studies led to the fortunate discovery of new methods for chemically isolating constituents of cell nuclei. How this discovery came about is related in Mirsky's very interesting scientific report for 1941-42. Among the contributions of Mirsky and his collaborator A.W. Pollister (of the Department of Zoology, Columbia University) were: a general method for preparing deoxyribose nucleic acid (DNA), an improved method for isolating cell nuclei, and the identification of non-histone nuclear protein.² Details of Mirsky's experiments, and references to the scientific literature, are preserved in the laboratory notebooks; of special interest are the notebooks "Plasmosin" (1941-42), "Chromatin" (1942), "Nucleoproteins" (1942-44), "Bacteriology" (1943-44), and "Chromosome and Gene--References" (ca. 1942). The overlap of Mirsky's work with that of Oswald T. Avery and his associates on transforming principle of Type III pneumococcus is documented in the Mirsky scientific reports for 1942-43 and 1943-44, as well as in several entries in the laboratory notebooks. Also of interest is a 1-1/2 inch subject file on O.T. Avery, which consists of reprints, articles,

*1
future
Lewin*

[?? add how that was a bridge to wider apper'ion of DNA research (Zachary Stuart)?*

Institute for Medical Research: Mirsky at the laboratories in New York City, and Anson at the Institute's Princeton branch. They were able to continue and extend the studies of protein denaturation, and between 1928 and 1935 co-authored 29 published papers. From 1935 to 1936 Mirsky was a visiting professor at the California Institute of Technology, where he worked with Linus Pauling on theory of protein structure.¹ Mirsky's early scientific work is documented primarily in laboratory notebooks and unpublished scientific reports. There are also some valuable autobiographical and historical remarks in exchanges with Alfred D. Hershey (1970), Daniel Koshland, Jr. (1971), and Jeffries Wyman (1972).

The protein denaturation studies led to the fruitful discovery of new methods for chemically isolating constituents of cell nuclei. How this discovery came about is related in Mirsky's very interesting scientific report for 1941-42. Among the contributions of Mirsky and his collaborator A.W. Pollister (of the Department of Zoology, Columbia University) were (1) a general method for preparing desoxyribose nucleic acid (DNA), (2) an improved method for isolating cell nuclei, and (3) the identification of non-histone nuclear protein.² This work was a bridge to wider appreciation of DNA research: Chargaff has written that Mirsky and Pollister's studies, with those of Hammersten's, were of "particular importance in providing the impulse for the isolation of a large number of highly polymerized preparations of deoxypentose nucleic acid."³ Indeed, some of Mirsky's own preparations were used by Oswald T. Avery and his associates in their work on transforming principle of Type III pneumococcus.⁴

Details of Mirsky's experiments from this period, and references to the scientific literature, are preserved in laboratory notebooks: of special interest are the notebooks "Plasmosin" (1941-42), "Chromatin" (1942),

In 1968 Mirsky published in Scientific American an historical article, "The Discovery of DNA," on the work of Friedrich Miescher and his contemporaries.¹⁰ Typescripts of the article are preserved with Mirsky's manuscripts; this file also has photocopies of background material, and a letter received from the physician of Mirsky's daughter Mary, dated 11 July 1978. There is additional Mirsky/Miescher source material in the correspondence files: letters from Karl Miescher, Friedrich Miescher's nephew, and a useful list of historical references compiled for Dr. Paul O.P. Ts'o in 1972.

The collection of personal photographs, approximately 2 inches, includes many informal pictures of Mirsky's laboratory associates. Several "vintage" photographs are of special historical interest: an informal portrait of Alfred E. Mirsky in 1922; an informal photo of T. Dobzhansky and L.C. Dunn; a portrait of the anatomist R.R. Bensley; and, an inscribed portrait from W.J.V. Osterhout to Mirsky.

The gift of the collection was made without restrictions; however, access to material of a confidential or sensitive nature may be limited.

An unpublished guide to the collection (92 pages) is available, compiled by Mrs. Gladys Lewis, Archivist.

Carolyn Kopp
University Archivist
The Rockefeller University
1230 York Ave. Box 263
New York, NY 10021-6399

1. A.E. Mirsky and Linus Pauling, "On the structure of native, denatured, and coagulated proteins," Proc. Natl. Acad. Sci. 22:439-77 (July 1936).
2. A.E. Mirsky and A.W. Pollister, "Chromosin, a desoxyribose nucleoprotein complex of the cell nucleus," J. Gen. Physiol. 30:117-48 (20 November 1946).
See also the citations to this paper in J.N. Davidson, The Biochemistry of the Nucleic Acids 4th ed. (New York: John Wiley and Sons, 1960), pp. 37, 137, 140.
- * 3. Erwin Chargaff, "Isolation and composition of the deoxypentose nucleic acids and of the corresponding nucleoproteins," in: Erwin Chargaff and J.N. Davidson, eds. The Nucleic Acids. Chemistry and Biology Vol. 1 (New York: Academic Press, 1955), pp. 307-71; quoted on page 312.
- * 4. Oswald T. Avery, Colin M. MacLeod, and Maclyn McCarty, "Studies on the chemical nature of the substance inducing transformation of pneumococcal types. Induction of transformation by a desoxyribonucleic acid fraction isolated from *Pneumococcus* Type III, " J. Exp. Med. 79:137-58 (1 February 1944); Mirsky acknowledged pp. 146, 147.
5. A.E. Mirsky and Hans Ris, "Variable and constant components of chromosomes," Nature 163:666-67 (30 April 1949). A more general discussion, with historical background, is A.E. Mirsky, "The chemistry of heredity," Scientific American 188:47-57 (February 1953).
6. Bruce S. McEwen, "Alfred E. Mirsky (1900-1974)," American Philosophical Society Yearbook 1976, pp. 100-103. See also Vincent G. Allfrey and Alfred E. Mirsky, "How cells make molecules," Scientific American 205: 74-82 (September 1961).
7. Paul F. Crane, "Alfred E. Mirsky, 1900-1974," J. Gen. Physiol. 64:131-33 (August 1974).
8. A.E. Mirsky, Book review of C.D. Darlington, The Facts of Life in: Scientific American 190:92-4 (April 1954).